

Appl. No. 10/803,244
Reply to Examiner's Action dated 11/30/2005

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. (Currently Amended) An apparatus, comprising,

a substrate having a planar surface

first and second electrodes located on said planar surface, said first electrode having a top surface and a lateral surface, said lateral surface having an edge near or in contact with said substrate;

an electrode insulating layer located on said top surface;

a self-assembled layer located on said lateral surface; and

wherein said second electrode is in contact with both said self-assembled layer and said electrode insulating layer and

wherein said first and second electrodes are in contact with opposite surfaces of said electrode insulating layer.
2. (Original) The apparatus of claim 1, wherein said self-assembled layer comprises a stack of at least two self-assembled layers.
3. (Original) The apparatus of Claim 2, wherein said stack of self-assembled layers comprises an end group of a first organic molecule in a first self-assembled layer chemically coupled to an end group of a second organic molecule in a second self-assembled layer.

Appl. No. 10/803,244

Reply to Examiner's Action dated 11/30/2005

4. (Original) The apparatus of Claim 3, wherein said coupling between said end groups of said first and second organic molecules includes a copper bridge.

5. (Original) The apparatus of Claim 1, wherein said self-assembled layer comprises non-conductive organic molecules.

6. (Original) The apparatus of Claim 1, wherein said self-assembled layer comprises semiconductive organic molecules.

7. (Original) The apparatus of Claim 1, wherein said self-assembled layer is covalently bonded to said lateral surface.

8. (Currently Amended) The apparatus of Claim 1, wherein said self-assembled layer comprises a channel and said apparatus comprises an organic field effect transistor, wherein said channel has a charge mobility of at least about $1 \times 10^{-3} \text{ cm}^2 \text{ V}^{-1} \text{ s}^{-1}$.

9. (Original) The apparatus of Claim 1, wherein a footprint of said electrode insulating layer is substantially aligned with said top surface.

Claims 10-20 (Canceled)

Appl. No. 10/803,244

Reply to Examiner's Action dated 11/30/2005

21. (New) The apparatus of Claim 1, wherein said second electrode overhangs said first electrode.
22. (New) The apparatus of Claim 1, wherein a thickness of said electrode insulating layer is greater than a separation distance between said first electrode and said second electrode.
23. (New) The apparatus of Claim 1, wherein a thickness of said electrode insulating layer is less than about 500 nanometers.
24. (New) The apparatus of Claim 1, wherein said first electrode and said second electrode are separated by a distance of less than about 5 nanometers.